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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,516	11/20/2001	Tatsuo Takanashi	01737/LH	1435

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EXAMINER
STULTZ, JESSICA T

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/989,516	TAKANASHI ET AL.	
	Examiner	Art Unit	
	Jessica T Stultz	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Pre-Amendment A filed on 2/5/2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Examiner's Comment

The abstract of Pre-Amendment A filed February 5, 2002 was not entered because it does not commence on a separate sheet in accordance with MPEP 37 CFR 1.52(b)(4). Nevertheless, the proposed new abstract would be objected to because it is too long. Specifically, the abstract cannot exceed more than 150 words. See MPEP 37 CFR 1.72.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Morisawa.

Regarding claim 1, Morisawa discloses a lens driving device comprising: a lens optical system having a moving lens group movable along a direction of an optical axis (Column 2, line 59-Column 3, line 19, wherein the moving lens groups are the front lens group"34" and the rear lens group"40", Figures 2-4), and a focal length which can be altered in stages among a plurality of values (Column 3, lines 16-40, wherein the lens groups "34" and "40" are moved by focusing adjusting plate "48" to vary the focal length between range 35mm to 70mm, Figures 2-4); a

moving lens group frame holding said moving lens group (Column 2, line 59-Column 3, line 3, wherein the moving lens frames are "30" and "38" Figures 2-4); an aperture device provided within said lens optical system (Column 3, lines 51-55, wherein the aperture device is "54" comprising an adjusting plate "58", blades "60", and cam plate "62", Figures 2-4) and having an aperture value which can be modified (Column 8, lines 67- Column 9, line 9, wherein the aperture adjusting plate "58" is rotated to various aperture values); a single driving source for changing the focal length value of said lens optical system and the aperture value of said aperture device (Column 3, line 4-Column 4, line 42, wherein the driving source is motor "46", which moves the focus adjusting plate "48", changing the focal length, and aperture adjusting plate "58", changing the aperture value, Figures 2-4) ; and a driving member driven by said single driving source for performing driving to move said moving lens group frame to achieve a desired focal length of said lens optical system from among said plurality of focal length values (Column 3, lines 4-50, wherein the motor "46" drives focus adjusting plate "48", which moves lens frames "30" and "38" to change the focal length, Figures 2-4), and for then performing driving to change the aperture value of said aperture device while maintaining the desired focal length value (Column 3, line 51-Column 4, line 42, wherein the motor "46" drives aperture adjusting plate "58" to change the aperture value of the device, and Column 9, lines 4-9, wherein the focal length is first changed by the motor and then the aperture value is changed by the same motor, Figures 2-4).

Regarding claim 2, Morisawa further discloses a lens driving device as is disclosed above wherein the driving member includes a lens driving cam comprising, in sequential connection (Column 3, lines 4-19 and Column 3, line 27-Column 4, line 2, wherein the cam portions are the

adjusting plate"48" and the support plate "56", which are in sequential connection, Figures 2-4), a first cam region which performs driving to displace said moving lens group frame in the optical axis direction (Column 3, lines 4-19 and lines 27-50, wherein the first cam region is focus adjusting plate "48", which moves the lens groups "38" and "30" along the optical axis, Figures 2-4), and a second cam region which does not perform driving to displace said moving lens group frame in the optical axis direction (Column 3, line 51-Column 4, line 42, wherein the second cam region is support plate "56", that hold the lens groups in place rather than moving them, Figures 2-4); and an aperture driving cam formed separately from said lens driving cam (Column 3, lines 49-55, wherein the third cam portion is aperture cam plate "62", Figures 2-4) for performing driving to change the aperture value of said aperture device when said moving lens group frame is in a state of not being displaced in the optical axis direction due to said moving lens group frame being in said second cam region (Column 3, lines 49-55 and Column 4, lines 3-42, wherein the third cam portion is aperture cam plate "62", and the movement of the aperture plate "62" depends on the movement of aperture adjusting plate "58", which is moved when the lens frames are supported by support plate "56", Figures 2-4).

Regarding claim 3, Morisawa further discloses a lens driving device as is disclosed above wherein said driving member comprises a cam ring of cylindrical shape (Column 3, lines 4-19, wherein the cam ring is zoom barrel "44", Figure 1) having a substantially uniform wall thickness (Shown in Figure 1); and said lens driving cam and said aperture driving cam are formed in the cam ring of cylindrical-shape as cam holes or as cam grooves (Column 3, lines 4-36, wherein lens frame "38" is connected to zoom barrel "44" by pin "38d" and focus adjusting plate "48" is connected to the rear of lens frame "38" and Column 4, line 23-25, wherein the

aperture cam plate "62" is also connected to lens frame "38" and therefore zoom barrel "44", by stop hole "62e" and projection portion "62c", Figures 1-4).

Regarding claim 9, Morisawa discloses a lens driving device comprising at least two moving lens group frames (Column 2, line 59-Column 3, line 3, wherein the moving lens frames are front lens frame"30" and rear lens frame "38" Figures 2-4), each capable of different movement in an optical axis direction (Column 3, lines 4-19, wherein the frames move along the optical axis, Figures 1-4); an aperture device provided in one of said moving lens group frames (Column 3, lines 51-55, wherein the aperture device "54" comprises adjusting plate "58", blades "60", and cam plate "62", located within frame "38", Figure 2); a cam member including: at least two lens driving cams (Column 3, lines 4-19, wherein the two lens driving cams are "30c" and "38d", corresponding to lens frames "30" and "38", Figures 1 and 2) each having a first cam portion and a second cam portion that are formed successively to drive corresponding moving lens groups (Column 3, lines 4-19 and Column 3, line 27-Column 4, line 2, wherein the first cam portion of lens group "38" is focus adjusting plate "48" and the second cam portion is support plate "56", which also adjusts or supports lens group frame "30" by connecting arm "36b", Figures 1-4) and a third cam portion formed separately from said lens driving cams (Column 3, lines 49-55, wherein the third cam portion is aperture cam plate "62", Figures 2-4); and a single driving source for driving said cam member to drive and displace said moving lens group frames and to drive said aperture device for changing an aperture value (Column 3, line 4-Column 4, line 42, wherein the driving source is motor "46" which moves the focus adjusting plate "48", changing the focal length, and aperture adjusting plate "58", changing the aperture value, Figures 2-4); wherein said first cam portion is provided in a range in which said moving lens group

frames are driven and displaces in the optical axis direction (Column 3, lines 4-19 and lines 27-50, wherein the first cam portion is focus adjusting plate "48", which moves the lens group frames "38" and "30" along the optical axis, Figures 2-4); said second cam portion is provided in a range in which said moving lens group frames are not driven and displace in the optical axis direction (Column 3, line 51-Column 4, line 42,wherein the second cam portion is support plate "56", that hold the lens group frames in place rather than moving them, Figures 2-4); and said third cam portion drives said aperture device to change the aperture value when said moving lens group frames are in a state of not being displaced in the optical axis direction due to said moving lens group frames being in the range of said second cam portion (Column 3, lines 49-55, Column 4, lines 3-42, and Column 9, lines 4-9, wherein the third cam portion is aperture cam plate "62", and the movement of the aperture plate "62" depends on the movement of aperture adjusting plate "58", which is moved when the lens frames are supported by support plate "56", Figures 2-4).

Regarding claim 10, Morisawa further discloses a lens driving device as disclosed above including control means for controlling operation of said cam member (Column 3, lines 20-26, wherein the control means is control circuit "45", Figures 2-4), as driven by said driving source (Column 3, lines 20-26, wherein the driving source is step motor "46", Figures 2-4), to set a focal length obtained by movement of said moving lens group frames and the aperture of said aperture device to desired values (Column 3, line 4-Column 4, line 42, wherein the driving source is motor "46" which moves the focus adjusting plate "48", changing the focal length, and aperture adjusting plate "58", changing the aperture value, Figures 2-4).

Regarding claim 11, Morisawa further discloses a lens driving device as is disclosed above wherein said driving member comprises a cam ring of cylindrical shape (Column 3, lines 4-19, wherein the cam ring is zoom barrel "44", Figure 1) having a substantially uniform wall thickness (Shown in Figure 1); and the first cam portion, second cam portion, and third cam portion are formed as cam holes or cam grooves in the cam ring of cylindrical-shape (Column 3, lines 4-36, wherein lens frame "38" is connected to zoom barrel "44" by pin "38d" and the first cam portion, focus adjusting plate "48" is connected to the rear of lens frame "38" and therefore zoom barrel "44" as well; Column 3, lines 56-68, wherein support plate "56" is also connected to lens frame "38" by stop holes "56e" and Column 4, line 23-25, wherein the aperture cam plate "62" is also connected to lens frame "38" by stop hole "62e" and projection portion "62c"and therefore zoom barrel "44" as well, Figures 1-4).

Regarding claims 4 and 12, Morisawa further discloses a lens driving device as disclosed above wherein the third aperture driving cam is formed so as not to change the aperture value of said aperture device during driving displacement of said moving lens group frame in the first cam region (Column 3, lines 49-55, Column 4, lines 3-42, and Column 9, lines 4-9, wherein the third cam portion is aperture cam plate "62", and the movement of the aperture plate "62" depends on the movement of aperture adjusting plate "58", which is moved only after the lens frames are supported by support plate "56", Figures 2-4).

Regarding claims 5 and 13, Morisawa further discloses a lens driving device as disclosed above including an impelling member (Column 3, lines 51-55, wherein the aperture blades "60" are an impelling member, Figures 2-4), provided in the aperture device (Column 3, lines 51-55, wherein the blades "60" are part of the aperture device "54", Figures 2-4), which impels the

aperture device in a prescribed direction such that the aperture value of the aperture device assumes a value determined in advance (Column 5, lines 28-58, wherein the aperture value is based on the distance measurement of device "72" and 74", Figures 6-12); and wherein while the moving lens group frame is driven and displaced in the first cam region (Column 5, lines 32-41, wherein the focus adjusting plate "48" is first moved by the motor "46", Figures 6-12) the aperture value of the aperture device attains the aperture value set in advance by means of the impelling force of the impelling member, without the aperture device being engaged with the third aperture driving cam (Column 5, lines 42-58, wherein the aperture adjusting plate "48" moves according to the gear "70", which is rotated by the focus adjusting plate "48" and not the aperture cam plate "62", Figures 6-12).

Regarding claims 6 and 14, it is inherent from Morisawa that the aperture device be impelled in a direction in which the aperture diameter is decreased, this being reasonably based upon the need for smaller aperture diameters for different photographic needs.

Regarding claims 7-8 and 15, Morisawa further discloses the lens driving device as disclosed above wherein the driving member is formed such that moving lens group frames are driven in one direction only to achieve the desired focal length value of the lens optical system (Column 3, lines 4-19 and lines 27-50, wherein the first cam portion is the focus adjusting plate "48", which moves the lens groups "38" and "30" along the optical axis toward the object, Figures 2-4) and the aperture device can then be driven to modify the aperture value while maintaining the desired focal length value (Column 3, lines 49-55, Column 4, lines 3-42, and Column 9, lines 4-9, wherein the third cam portion is aperture cam plate "62", and the movement

of the aperture plate "62" depends on the movement of aperture adjusting plate "58", which is moved only after the lens frames are supported by support plate "56", Figures 2-4).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kaneda and Metabi are of some similar structure to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica T Stultz whose telephone number is (703) 305-6106. The examiner can normally be reached on M-Th 7:30-5, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 703-308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Jessica Stultz
February 4, 2003

JORDAN SCHWARTZ
PRIMARY EXAMINER